

**ABSTRACT**

An apparatus for obtaining tomographic data of an object comprises a radiation source (50), a detector (42) comprising multiple line detectors (41), an object region (53) arranged in the radiation path between the source and the detector, and a device (54) for moving the source and detector relative the object, while each of the line detectors records multiple line images of radiation as transmitted through the object. The source emits radiation within a large angle to irradiate the object completely in one dimension (y), and the line detectors are sited in rows (71) and columns (72), wherein the line detectors in each row together define an opening angle ( $\alpha$ ) large enough to detect the object completely in the dimension (y). The moving device is adapted to move the source and detector relative the object helically around a z axis to obtain tomographic data of the object, wherein the helical movement includes a rotation less than essentially one full revolution, and a distance along the z axis corresponding to a distance between two adjacent detectors in a column of the two-dimensional array.